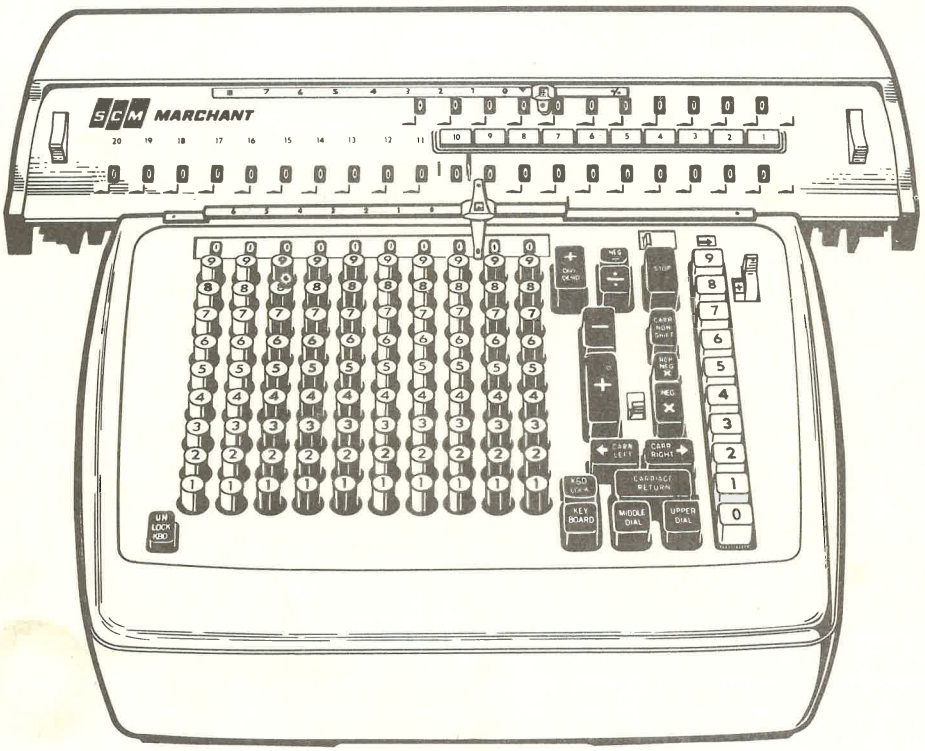
MARCHANT
Figuremaster
MODEL CMF



OPERATING INSTRUCTIONS

SCM SMITH-CORONA MARCHANT INC.

FORM NO. IN-CMF-2

FORWARD

This manual will enable a beginner to learn to operate a Marchant calculator with ease and accuracy. Marchant calculator operators are invited to call the Marchant Representative for additional aid, if needed, and free instruction or help in special applications for various industries and professions.

WARRANTY: Every new Marchant calculator carries a warranty against defective material or workmanship for twelve months. The calculator is designed to give dependable performance throughout many years, but naturally its continuous usefulness will be prolonged by periodic lubrication and inspection. Therefore, we recommend that, at the end of the warranty period, the Marchant calculator be placed under our maintenance service so that it will receive continual expert attention at moderate cost.

SERVICE: Mechanical service by personnel trained under factory supervision is available at Marchant offices in all principal cities of the United States, and through Marchant distributors throughout the world.

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410 PARK AVENUE, NEW YORK 22, N.Y.

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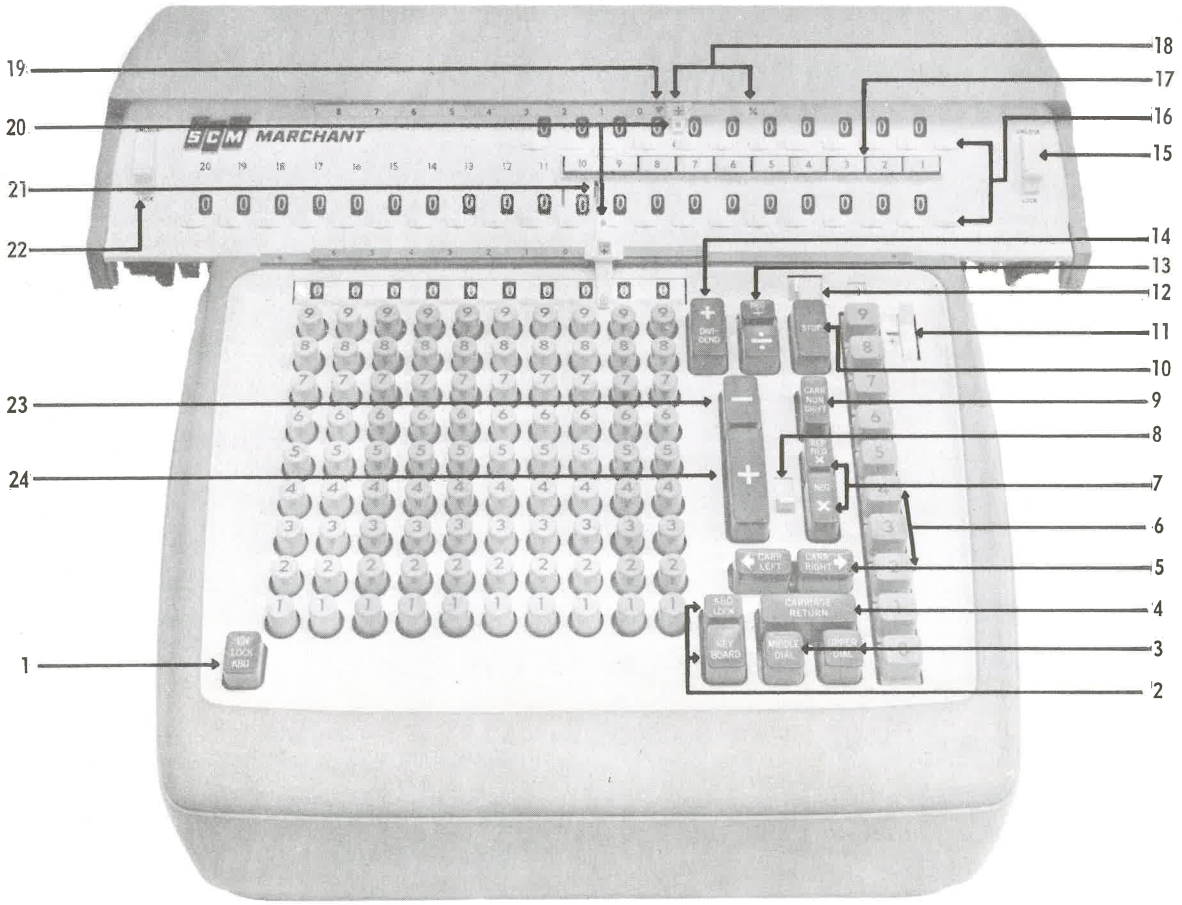
MODEL CMF



MARCHANT FIGUREMASTER

1. UNLOCK KEYBOARD KEY
2. KEYBOARD LOCK and CLEAR KEYS
3. ELECTRIC DIAL CLEARANCE KEYS
4. CARRIAGE RETURN KEY
5. ELECTRIC CARRIAGE SHIFT KEYS
6. AUTOMATIC MULTIPLIER KEYS
7. NEGATIVE MULTIPLICATION and REPEAT KEYS
8. DIVISION CLEAR RETURN KEY
   Normal position is toward operator.
9. CARRIAGE NON SHIFT KEY
   Holds carriage stationary when Multiplier Key is touched.
10. STOP KEY
    Stops division. Also releases NON SHIFT and REPEAT NEG X KEYS.
11. UPPER DIAL CONTROL
    Normal position is on plus (+).
12. MULTIPLIER DIRECTION CONTROL
    Normal position shows arrow →
13. AUTOMATIC DIVISION and NEGATIVE DIVISION KEYS
14. DIVIDEND + KEY
    Clears carriage dials, enters dividend in Middle Dial, clears Keyboard Dial, enters item count in Upper Dial.
15. RIGHT MIDDLE DIAL LOCK
    Normal position up. Move down to lock Middle Dials 1 through 9.
16. BLACK SLIDE-SET DECIMAL MARKERS
    One for each dial; set by sliding to right.
17. TABULATOR KEYS
    Any one or more keys may be set at the same time. To release all Tab Keys, touch Tab Key "10".
18. AUTOMATIC DIVISION and PERCENT DECIMALS
19. ACTIVE DIAL INDICATOR
    Orange triangle indicates carriage position and active dial.
20. ORANGE QUICK-SET DECIMALS
    Easiest for routine multiplication and division.
21. AUTOMATIC HALF-CENT ROUND-OFF
    Normal position is down.
22. LEFT MIDDLE DIAL LOCK
    Normal position up. Move down to lock Middle Dials 10 through 20.
23. SUBTRACT BAR
24. ADD BAR

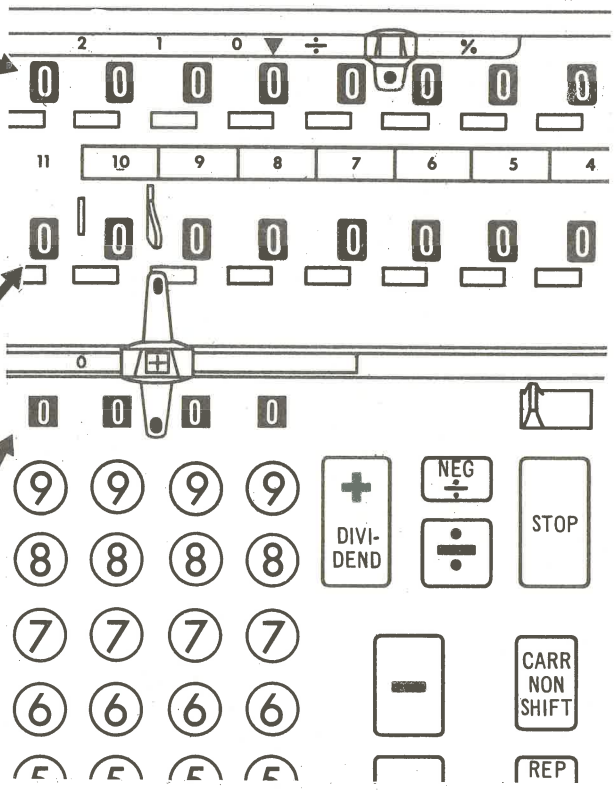
DIALS

Marchant has three dials – straight-line, true-figure dials for each factor including the keyboard entry. Every operation performed on the calculator is shown in one or more of these dials providing progressive proof of every factor entered.

The **UPPER DIAL** shows the multiplier in multiplication, the answer (quotient) in division, and the count of items in addition or subtraction. The eleventh upper dial (overflow counter dial) is used in the accumulation of multipliers or quotients, or to identify negative counts.

The **MIDDLE DIAL** shows the answer in addition, subtraction, multiplication, the dividend in division before dividing and the remainder in division after dividing (if desired).

The **KEYBOARD DIAL** shows in a straight-line every figure entered in the keyboard. This easy-to-read Keyboard Dial is one of Marchant's many exclusive features that contribute to ease and accuracy.



Complete carriage carry-over makes every dial active regardless of carriage position. There are no dead dials, assuring complete accuracy.

KEYBOARD

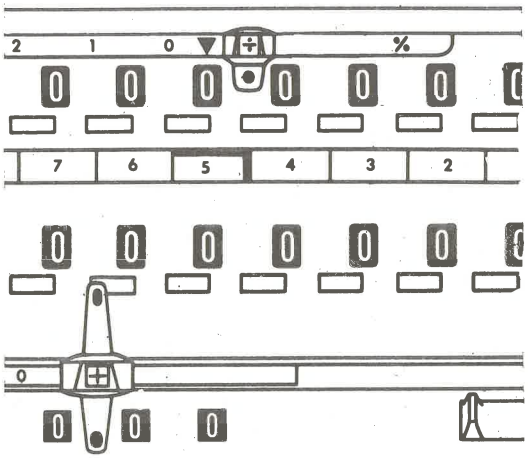
Depress several keys in the keyboard and notice that these figures show instantly in the Keyboard Dial. The Marchant's unlimited flexible keylock permits locking a number in any keyboard column. No zero keys are required. Marchant's flexible single-key depression prevents the setting of more than one key in the same column at the same time.

To change any amount in the keyboard, depress the desired key. The correct figure appears in the dial.

To clear one column only, simultaneously depress any two keys in that column. To clear the entire keyboard, depress either KEYBOARD or UNLOCK KEYBOARD DIAL KEYS.

CARRIAGE POSITIONING

The orange triangle, located above the Upper Dial, is the ACTIVE DIAL INDICATOR. It indicates the carriage position and the active dial. The numbers on the tabulation keys are used to identify the carriage position. In the illustration, the ACTIVE DIAL INDICATOR points to Upper Dial 5. The carriage is said to be in Position 5, and any dial action will begin in this "active" dial.



TABULATION

The Tabulation Keys, located on the carriage, are useful in multiplication and division. To set more than one tab, depress the keys simultaneously. Depressing one or more keys clears any previous tab. The highest numbered tab key releases all tabs.

ELECTRIC CARRIAGE SHIFT KEYS

These keys are provided to shift the carriage to the right or left. The arrow indicates the direction in which the carriage will move. To shift carriage into position indicated by tab setting, hold down proper SHIFT KEY until carriage stops. If more than one tab key is set, the carriage will stop at the first tab setting reached. Another depression of the proper SHIFT KEY moves the carriage to the next tab setting.

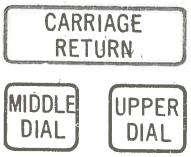
For practice: Hold down CARRIAGE LEFT KEY until carriage moves all the way to the left (position 1). Now set Tab Key #5 and hold down CARRIAGE RIGHT KEY. Notice that carriage stops in 5th position (active dial triangle points to 5th Upper Dial).

CARRIAGE RETURN KEY

In routine operations, control of the carriage is automatic. A single depression of the CARRIAGE RETURN KEY returns carriage to tab position from lower position (as shown in example below).

For practice: With carriage in 5th position, hold down CARRIAGE LEFT KEY until carriage stops in 1st position. Touch CARRIAGE RETURN KEY and notice that carriage automatically returns to tab position (position 5).

CLEARANCE



These controls are conveniently grouped for instantaneous clearance of any or all dials-with ONE STROKE. Their action is always positive regardless of carriage position. To clear all dials and automatically position carriage to previously selected tab setting, with one stroke, depress MIDDLE DIAL, UPPER DIAL and CARRIAGE RETURN KEYS (the "Clear-Tab"group).

Selective, electric dial clearance keys are provided for the Keyboard Dial, Middle Dial and Upper Dial. These keys can be used to clear instantly any dial from any carriage position.

Clearance of the Keyboard Dial is automatic following a depression of the ADD or SUBTRACT BARS or DIVIDEND + or DIVISION KEYS. The Keyboard Dial does not clear following multiplication because this would eliminate Marchant's three dial proof following each multiplication.

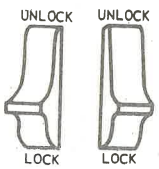
KEYBOARD LOCK

When the KEYBOARD DIAL (KBD) LOCK is depressed, amounts entered in the Keyboard will not clear on addition, subtraction, or after division. Amounts may be changed while the lock remains set. To clear, depress KEYBOARD KEY.

For certain applications, it is desirable to lock figures in part of the Keyboard and retain normal clearance in other columns. To accomplish this, hold down the KEYBOARD KEY while entering the figures to be locked. To change only part of the locked amount, hold down the KEYBOARD KEY and change the necessary figures.

To clear an amount locked in this manner, depress UNLOCK KEYBOARD DIAL (UNLOCK KBD) KEY located at the lower left-hand corner of the keyboard.

MIDDLE DIAL LOCKS



There are two locks for the Middle Dial, making it possible to retain some figures while clearing others. The RIGHT MIDDLE DIAL LOCK prevents automatic clearance of dials 1 through 9. The LEFT MIDDLE DIAL LOCK prevents automatic clearance of dials 10 through 20. Move down to lock (blue color indicates lock is set); push in and up to restore to normal. For intermediate clearances, the lock may be held in with one finger while the other hand touches the MIDDLE DIAL CLEAR KEY.

AUTOMATIC ADDITION

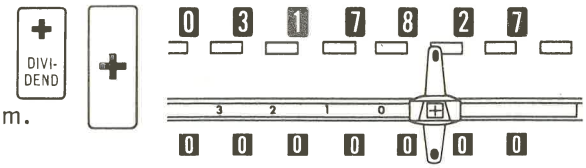
Addition and Subtraction may be performed in any carriage position. However, Position 1 is preferred.

225.50
665.85
715.35
823.72
747.85
3,178.27

Set Keyboard Decimal at 2, Orange Middle Dial Quick-Set Decimal (Magic Window) at "+".

A) Enter (225.50) in keyboard around decimal point. Depress DIVIDEND + KEY.

B) Enter (665.85) in Keyboard. Depress ADD BAR. Repeat Step (B) for each item.



The total appears in the Middle Dial and a count of the items added shows in the Upper Dial. No matter how long the ADD BAR is held down, Marchant will add that amount only once, and will register only "one" count in the Upper Dial.

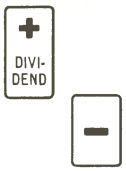
DIRECT SUBTRACTION

3,175.75
− 655.30
2,520.45

Keyboard Decimal at 2, Magic Window at "+".

A) Enter (3,175.75) in keyboard. Depress DIVIDEND + KEY.

B) Enter (655.30) in keyboard. Depress SUBTRACT BAR.



AUTOMATIC REPEAT ADDITION AND SUBTRACTION

Whenever the same amount is to be added more than once, simultaneously depress ADD BAR and MULTIPLIER KEY indexed for the number of repeats desired. Marchant automatically counts, repeats the addition, and clears the Keyboard Dial. When the same amount is to be subtracted more than once, simultaneously touch SUBTRACT BAR and MULTIPLIER KEY indexed for the number of repeats desired.

35.03
68.90
23.56
23.56
23.56
23.56
16.53
10.22
224.92

Keyboard Decimal at 2, Magic Window at "+".

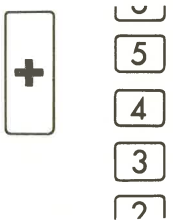
A) Enter (35.03) in keyboard. Depress DIVIDEND + KEY.

B) Enter (68.90) in keyboard. Depress ADD BAR.

C) Enter (23.56) in keyboard. Depress ADD BAR and #4 MULTIPLIER KEY together.

D) Continue with next two items as in Step (B).

Total (224.92) appears in Middle Dial, and the item count (8) appears in Upper Dial.



CREDIT BALANCE

A Middle Dial total preceded by 9999... indicates that more has been subtracted than added – the Middle Dial figures are the "complement" of the answer to be recorded.

The complement of a number is the difference between that number and the next higher power of 10. For example, the complement of 12 is 88 (100-12); the complement of 144 is 856 (1000-144).

$ 335.42	To change this total to a positive amount, copy the figures from the
-8,932.00	Middle Dial into the keyboard directly below their location in the
...9991,403.42	Middle Dial preceding them with three or more nines (9991403.42).
$8,596.58 CR	Depress the MIDDLE DIAL KEY, then the SUBTRACT BAR.

Read answer ($8,596.58) from Middle Dial. Disregard the nines in the Middle Dial to the left of the zeros. Either precede the copied answer with a minus sign (-), or write "CR" to the right of it.

ADDING AND SUBTRACTING TO A CONSTANT

A constant is a repeated quantity of fixed value. Problems dealing with weights are a common form of calculation in which constants are used.

The tare, or weight of a given container, is 15 pounds. Determine the gross weight (weight of the contents plus the tare weight of the container).

Net Weight	Tare	Gross Weight
45	15	60
38	15	53
42	15	57

A) With carriage in Position 1, enter the constant factor (15) in keyboard.
Depress DIVIDEND + KEY.

B) Enter net weight (45) in keyboard. Depress MULTIPLIER KEY "1".
Copy gross weight (60 pounds) from Middle Dial.

C) Depress SUBTRACT BAR.
Constant (15) re-appears in Middle Dial.

Repeat Steps (B) and (C) for next two items.

The procedure is essentially the same in subtracting as in adding to a constant. Step (B) would read, "Negatively multiply by 1". Step (C) would read, "Depress ADD BAR".

SUBTRACTING A CONSTANT

The tare, or weight of a given truck is 9500 pounds. Determine the net weight of a truckload of goods (weight of the contents and truck minus the weight of the truck).

Gross Weight	Tare	Net Weight
14500	9500	5000
13300	9500	3800
16700	9500	7200

A) With carriage in Position 1, enter the constant factor (9500) in keyboard. Depress SUBTRACT BAR, producing the complement of the constant in the Middle Dial.

B) Enter gross weight (14500) in keyboard. Depress MULTIPLIER KEY "1". Copy net weight (5000 pounds) from Middle Dial.

C) Depress SUBTRACT BAR.
Complement of the constant re-appears in Middle Dial.
Repeat Steps (B) and (C) for next two items.

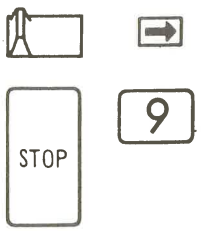
AUTOMATIC SIMULTANEOUS "PUSH-BUTTON" MULTIPLICATION

The word "simultaneous" emphasizes the outstanding feature of Marchant's exclusive "Live-Key" Multiplication. "Simultaneous" Multiplication means that Marchant actually multiplies while the operator is entering the multiplier figures! It is the simplest and fastest mechanical multiplication known.

The product can be read from the Middle Dial as soon as the last multiplier digit has been entered. The multiplicand remains in the Keyboard Dial and the multiplier appears in the Upper Dial as proof of the correct entry of both factors. It is not necessary to calculate a problem twice to check the answer on a Marchant calculator.

MULTIPLIER DIRECTION CONTROL

The Figuremaster will multiply with the carriage shifting toward the left or the right as desired. The Multiplier is usually entered from left to right as you read it. Normal position for multiplication is with the directional arrow pointing to the right. This position is assumed throughout the manual. When the color blue shows, the MULTIPLIER DIRECTION CONTROL is not in normal position.



ORANGE QUICK-SET DECIMALS

Marchant's Orange Quick-Set Decimal System is ideal for routine multiplications where the highest speed possible is required in making single multiplications. The multiplier is entered as it is read from left to right. The MULTIPLIER DIRECTION CONTROL is positioned with the arrow pointing to the right.

RULE FOR SETTING MARCHANT'S QUICK-SET DECIMALS:

1. Set Keyboard Dial Decimal Pointer for the number of decimals desired in the Keyboard Factor (Multiplicand).
2. Set Upper Orange Decimal for the number of decimals required in the Multiplier.
3. Set "Magic Window" (Middle Dial Orange Decimal) over the same number as shown by the Upper Orange Decimal.

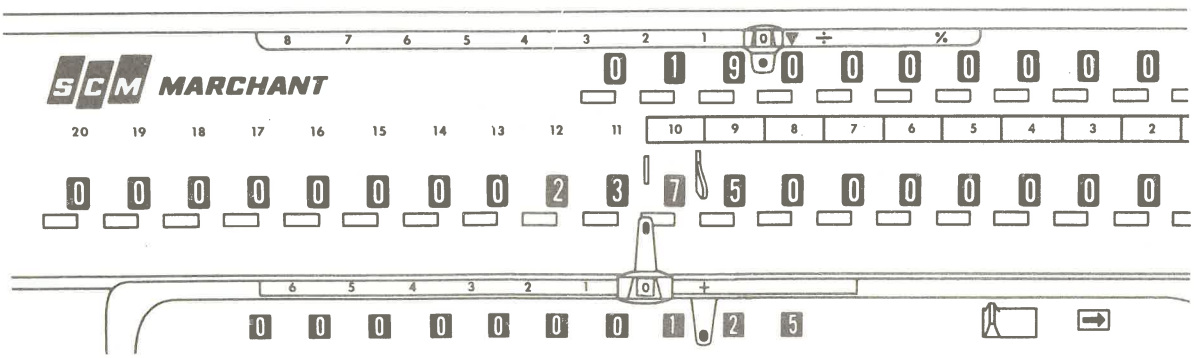
Orange Decimals: Keyboard Dial 2, Upper Dial 0, Magic Window at "0". Carriage at right. No tabs set.

1.25
×19
23.75

A) Enter multiplicand (1.25) in keyboard.

B) Enter multiplier (19) in Automatic Multiplier Keyboard.

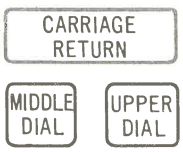
As you enter the last figure (9) of the multiplier, the answer (23.75) appears correctly in the Middle Dial.



NOTICE . . . . Marchant's THREE-DIAL PROOF!

Multiplicand (1.25) appears in Keyboard Dial.
Multiplier (19) appears in Upper Dial.
Correct Answer (23.75) appears in Middle Dial.

When using the Orange Quick-Set Decimals, any carriage starting position may be selected as long as it is at least one higher than the number of digits in the multiplier. For greatest ease, the carriage is preferred at the extreme right with no tabs set. Between multiplications the carriage is repositioned and the dials cleared simultaneously by depressing the "Clear-Tab" group.



If an occasional Multiplier has fewer decimals than are provided for in the setting, add zeros to make the correct number of decimals.

If an occasional Multiplier has more decimals, enter Multiplier and "back space" by depressing the CARRIAGE RIGHT ⟶ KEY to make the correct number of decimals.

When the Multiplier decimals vary greatly-set only the Keyboard Dial Decimal and multiply. Read the Middle Dial answer decimal directly above the number on the slide which corresponds to the number of decimals used in the Multiplier.

If the Multiplier contains four decimals, the decimal in the answer will appear above the Orange "4" on the slide.

If the Multiplier contains no decimals, the decimal in the answer will appear above the Orange "0" on the slide.

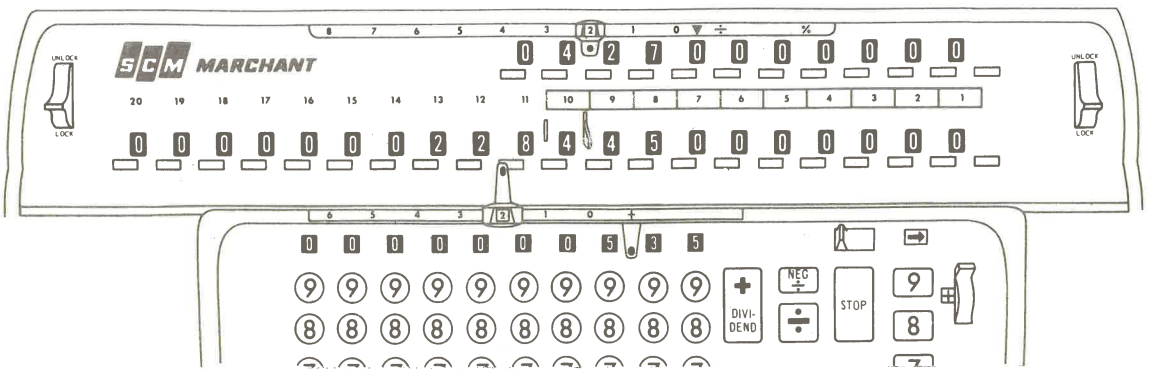
$$\begin{array}{r} 5.35 \\ \times\ 4.27 \\ \hline 22.8445 \end{array}$$

Decimals: Keyboard Dial 2, Upper Dial 2, Magic Window at "2". Carriage at right. No tabs set.

A) Enter multiplicand (5.35) in keyboard.

B) Enter multiplier (4.27) in Multiplier Keyboard.

The answer (22.8445) appears correctly in Middle Dial.



TO CHANGE A MULTIPLIER ALREADY ENTERED

Marchant's great flexibility makes it extremely easy to change any digit entered in the Automatic Multiplier Keyboard – either during multiplication or even after the multiplication has been completed.

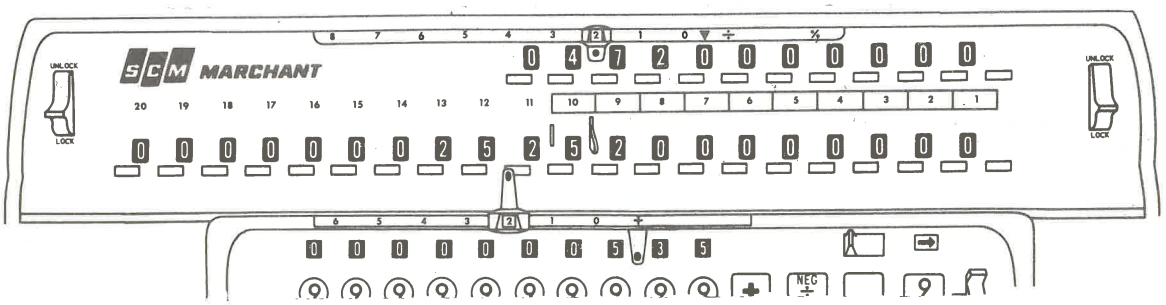
Here's how to do it:

Position the ACTIVE DIAL INDICATOR over the figure in the Upper Dial you wish to change, then:

To increase, depress the multiplier key that when added to the digit equals the amount desired.

To decrease, depress NEG X KEY. Depress the multiplier key that when subtracted from the digit equals the amount desired.

Assume that in the previous example the multiplier should have been 4.72 instead of 4.27. It is not necessary to do the multiplication over. Move carriage so that the ACTIVE DIAL INDICATOR points to the "2" in the Upper Dial. Depress mutiplier key #5 to increase the 2 to a 7. Then depress the NEG X KEY and multiplier key #5 to decrease the 7 to a 2. The new product (25.2520) appears in Middle Dial..



THATS ALL. . . .

Marchant automatically changes the Upper Dial to the correct reading and at the same time automatically corrects the answer! The answer is correct, because a quick visual check of both factors (5.35 in Keyboard Dial and 4.72 in Upper Dial) are positive proof.

BLACK SLIDE-SET DECIMALS

The Orange (Quick-Set) Decimals are ideal for most routine work. However, tor some applications such as accumulative multiplication, the Black Decimals are used. This decimal system offers the greatest flexibility and can be used for all operations. Notice that there is a decimal slide for each carriage dial. A decimal point is set by moving the slide to the right.

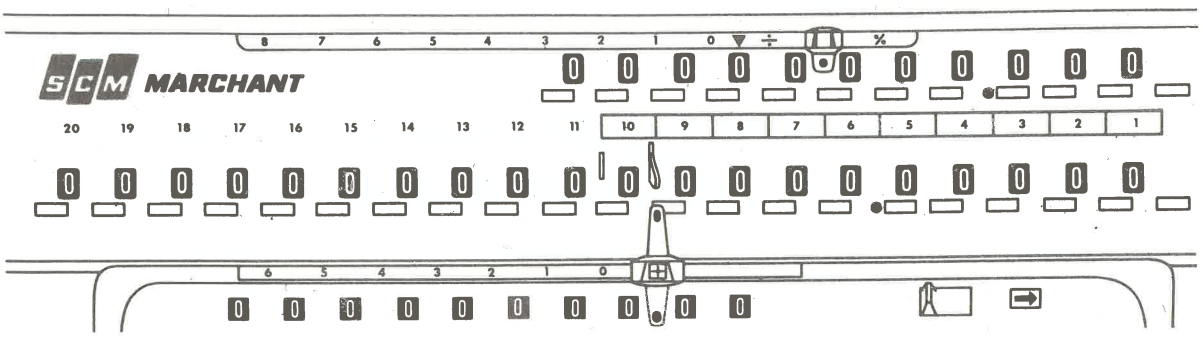
GENERAL RULE FOR SETTING BLACK SLIDE-SET DECIMALS:

Determine the maximum number of decimal places needed for a group of problems before working any of them.

Keyboard Dial-set for the greatest number of places in the amounts to be added, subtracted or divided, and in the multiplicand for multiplication.

Upper Dial-set for the greatest number of decimal places in the multipliers or the greatest number of decimal places desired for a division answer, whichever of the two is greater.

Middle Dial-set for the sum of the decimal places in the Keyboard plus the Upper Dial.



ACCUMULATION OF PRODUCTS

Much time may be saved in certain kinds of work, such as checking invoices and inventories, by allowing products to accumulate in the Middle Dial and checking only totals.

It is not necessary to use any special controls when accumulating products. Just omit clearance of the Middle Dial between multiplications.

Check the following invoice:

75 1/2 yards @ $ 3.26	= $246.13
48 1/4 yards @ $16.21 1/2	= 782.37
96 3/8 yards @ $ 2.16 1/4	= 208.41
	$1,236.91

Black Decimals: Keyboard Dial 3, Upper Dial 4, Middle Dial 7, Tab Key #5.

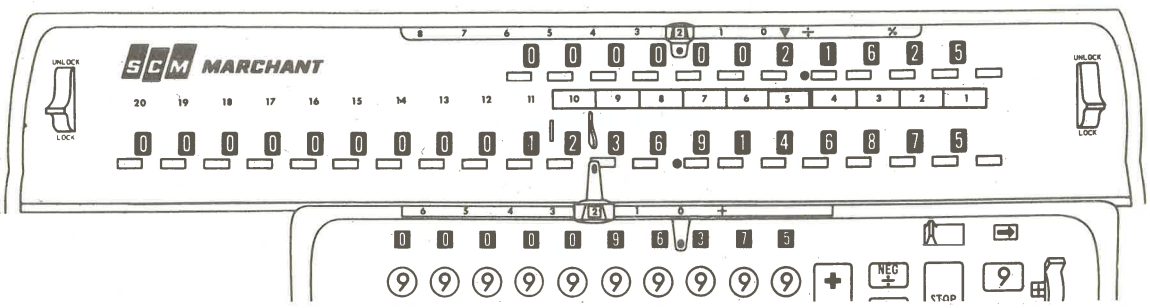
A) With carriage in position 5, enter yards (75.5) in keyboard.

B) Multiply by price (3.26) correctly around Upper Dial Decimal. Check price (3.26) in Upper Dial, yards (75.5) in Keyboard Dial.

C) Depress CARRIAGE RETURN KEY with Upper and Keyboard Dial clear keys.

D) Enter (48.25) in keyboard. Notice that multiplier (16.215) contains two digits to the left of the decimal. It is necessary to back-space once (tap CARR RIGHT→KEY) in order to enter multiplier properly around decimal. Procede with multiplication when ACTIVE DIAL INDICATOR points to correct starting position. (Note: setting adjacent Tab Keys prevents back-spacing more than one dial at a time.)

E) "Clear-Tab" (except Middle Dial), enter (96.375) in keyboard, and multiply by (2.1625).



AUTOMATIC ACCUMULATION OF MULTIPLIERS

It is not necessary to use any special controls when using the Marchant Figuremaster calculator to accumulate multipliers in the Upper Dial. The operator just omits clearance of the Upper Dial between multiplications.

MULTIPLICATION WITH A CONSTANT

Frequently a series of multiplications involve a constant factor. The constant is entered in the Keyboard Dial where it remains throughout the computations. The variable multipliers are entered in the Automatic Multiplier Keyboard.

AUTOMATIC NEGATIVE MULTIPLICATION

The Marchant Figuremaster calculator automatically multiplies and simultaneously subtracts the product from the amount in the Middle Dial. For negative multiplication by one digit, depress the NEG X KEY, by more than one digit, depress the REP NEG X KEY. The REP NEG X and NEG X KEYS may be released by depressing the STOP or CARRIAGE RETURN KEY.

$$(15.73 \times .74) - (4.52 \times .33) = 10.1486$$

Black Decimals: Keyboard Dial 2, Upper Dial 2, Middle Dial 4, Tab Key #2.

A) With carriage in Position 2, enter (15.73) in keyboard.

B) Multiply by (.74). Middle Dial reads: (11.6402). Depress KEYBOARD KEY and "Clear-Tab" group except MIDDLE DIAL KEY.

C) Enter (4.52) in keyboard.

D) Depress REP NEG X KEY, and multiply by (.33). Middle Dial reads: (10.1486).

SIMPLE DISCOUNTS

Total of an invoice is $567.00 from which a 15% discount is deducted. Find the "net" amount (amount remaining after the discount is deducted). In one step, multiply the total of the invoice by the complement (100% – 15%) of the discount rate.

$$\$567.00 \times .85 = \$481.95$$

Another Method: Orange Decimals: Keyboard Dial 2, Upper Dial 2, Magic Window at "2". Carriage at right. No tabs set.

A) Enter (567.00) in keyboard and multiply by "1", which equals 100% of 567.00.
Both the Keyboard and Middle Dials show 567.00.

B) Depress REP NEG X KEY and enter (.15) in Multiplier Keyboard.
Middle Dial shows the net amount $481.95.
Upper Dial shows the net percentage .85.

CHAIN DISCOUNTS

Chain Discount is a form of trade discount consisting of a series of percents deducted from a gross amount. (The same procedure used to deduct a single discount applies to deducting a chain of discounts.)

$392.00 less 15, 10, 5% = $284.89

The problem is actually:
($392.00 minus 15% = $333.20 minus 10% = $299.88 minus 5% = $284.89).

CHAIN DISCOUNT FACTORS AND TABLES

If the intermediate answers are not needed, the above example can be shortened by multiplying the amount of the invoice ($392.00) by the product of the complements of the discount rates (.85 × .90 × .95 = .72675).

$392.00 × .72675 = $284.89

NET DECIMAL EQUIVALENT: To find the net decimal equivalent of chain discounts, multiply the complements of the discount rates and subtract the resulting product from 1.0 (1.0 less .85 × .90 × .95 = .27325). To find the amount of the discount, multiply the invoice price by this net decimal equivalent ($392.00 × .27325 = $107.11).

Usually chain discount work can be simplified by direct multiplication, using special tables prepared by Marchant, and supplied on request. Marchant Tables 14 and 14A show decimal equivalents for commonly used chain discounts and their complements. Multiplying any amount by the decimal equivalent of the chain discount gives the amount of the discount. Multiplying the amount by the decimal equivalent of the complement of the discount gives the net amount after deduction of the discount.

Find discount and net amount of $465.75 less discount of 12½, 5, 2½%.

Orange Decimals: Keyboard Dial 5, Upper Dial 2, Magic Window at "2". Carriage at right. No tabs set.

A) Enter (.18953) (decimal equivalent of discount obtained from table) in keyboard. Multiply by (465.75). The discount, ($88.27), appears in Middle Dial.

B) To obtain the net amount, "Clear-Tab" all dials. Enter (.81047) (complement of decimal equivalent obtained from table) in the keyboard. Multiply by (465.75).
The net amount, ($377.48), appears in Middle Dial.

DOUBLE MULTIPLICATION

Two amounts may be multiplied by the same multiplier in one operation. In entering invoices of incoming merchandise, many stores show both cost and selling price on the invoice and require both columns to be extended.

Quantity	Selling Price	Amount	Cost Price	Amount
96	$.55	$52.80	$.33	$31.68
58	.67	38.86	.45	26.10

Black Decimals: Keyboard Dials 8 and 2, Upper Dial 2, Middle Dials 10 and 4.

A) Enter Selling Price (.55) in keyboard around 8th decimal and Cost Price (.33) around 2nd decimal.

B) Multiply by Quantity (96).

Middle Dial shows total Selling Price ($52.80) at the left, and Cost ($31.68) at the right.

"Clear-Tab" all dials and repeat above steps for new extensions.

This application may be easily modified to accomodate discounts, transportation, and proportionate surcharges.

AUTOMATIC DIVISION

The Marchant Figuremaster calculator performs all division problems automatically and electrically at the depression of a key, giving instant results with unequalled simplicity and ease.

DIVIDEND ÷ DIVISOR = QUOTIENT
128.34 ÷ 31.65 = 4.055

1. Determine how many decimal places you want in your answer (provide one extra decimal place for rounding-off) and depress the Tab Key numbered one higher than the number of decimal places desired.

   For this example, depress Tab Key 5 and shift carriage to fifth position.

2. Set Upper Dial Orange Decimal under "÷" sign.

   Notice there are four dials to the right of the decimal.

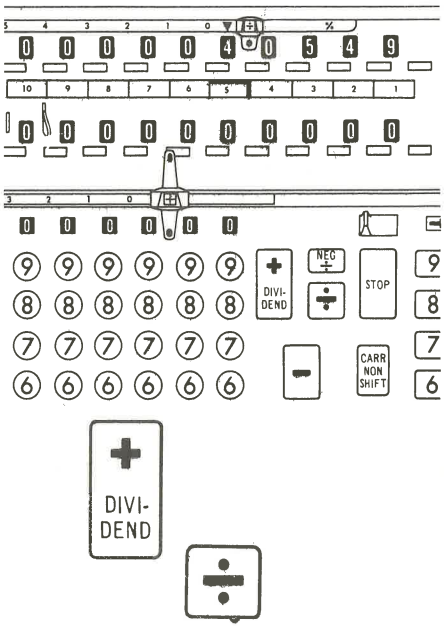
3. Position the Keyboard Dial Decimal to accomodate both dividend and divisor.

4. Position the "Magic Window" (Middle Dial Decimal Marker) over the "+" sign.

   A) Enter dividend (128.34) in keyboard around decimal point. Depress DIVIDEND + KEY to transfer the dividend into the Middle Dial.

   B) Enter divisor (31.65) in keyboard around decimal point. Depress DIVISION KEY. Any figures in Upper Dial automatically clear as the DIVISION KEY is depressed.

   The answer (4.0549) automatically appears in Upper Dial.



DIVISION LINE-UP

When the DIVISION KEY is depressed, the carriage shifts to the right, aligning the divisor with the dividend.

It is often not necessary for the carriage to shift all the way to the right. In the following problem, no line-up is required.

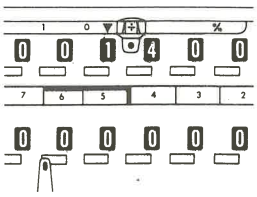
On an invoice showing the number of items and the total cost, find the cost per item.

$33.60 ÷ 24 = $1.40

Depress Tab Keys 5 and 6 simultaneously. Carriage in position 5.
Orange Decimals: Keyboard Dial 2, Upper Dial under "÷" sign,
"Magic Window" over "+" sign.

A) Enter total cost (33.69) in keyboard. Depress DIVIDEND + KEY.

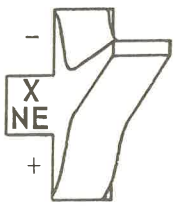
B) Enter number of items (24) in keyboard. Depress DIVISION KEY. The cost per item ($1.40) appears in Upper Dial.



STOP KEY

One touch of the STOP KEY completes the division in the active dial and stops the operation. Touching the STOP KEY twice stops division immediately. The STOP KEY also releases the CARRIAGE NON SHIFT KEY and the REP NEG X and NEG X KEYS.

UPPER DIAL CONTROL



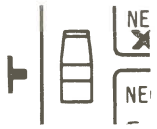
\- Reverses normal direction of count in Upper Dial for all operations.

X-NE Prevents entry of counts in Upper Dial during addition, subtraction, or multiplication. Prevents automatic clearance of Upper Dial to allow the accumulation of quotients.

\+ Normal position for this control.

DIVISION CLEAR RETURN KEY

This feature clears the remainder and returns the carriage to point-off the correct decimal point in the quotient. The Figuremaster is ready to divide again. No clearance is necessary.



When the DIVISION CLEAR RETURN KEY is positioned away from the operator, the color blue shows indicating that it is not in normal position. After dividing, the remainder remains in the Middle Dial, the divisor is retained in the Keyboard Dial, and the carriage stays in the first position. To locate the decimal point, depress the CARRIAGE RETURN KEY.

It is possible to stop a division in process, inspect the remainder, and continue the division. To do this, move the DIVISION CLEAR RETURN KEY up and touch the STOP KEY. To resume division, set UPPER DIAL CONTROL at X-NE and depress the DIVISION KEY.

ACCUMLATION OF QUOTIENTS

$$\frac{149}{63} + \frac{287}{19} - \frac{314}{41} = 9.81180$$

Upper Dial Orange Decimal under "÷" sign. Set Tab Keys 6 and 7. position 6.

A) Enter (149) in keyboard. Depress DIVIDEND + KEY.

B) Enter (63) in keyboard. Depress DIVISION KEY.
Set UPPER DIAL CONTROL at X-NE

C) Enter (287) in keyboard. Depress DIVIDEND + KEY.

D) Enter (19) in keyboard. Depress DIVISION KEY.

E) Enter (314) in keyboard. Depress DIVIDEND + KEY.

F) Enter (41) in keyboard. Set UPPER DIAL CONTROL at minus (-) to subtract the new quotient from the previous total.
Depress DIVISION KEY. UPPER DIAL CONTROL automatically restores to X-NE.

Accumulated quotients (9.81180) appear in Upper Dial.

DIVISION BY "1"

To transfer an amount from the Middle Dial to the Upper Dial, divide the Middle Dial amount by "1".

GRAND TOTAL and ACCUMULATION OF PRODUCTS are examples of division by "1".

GRAND TOTALS

Determine individual totals and grand total in the following example:

13.46		32.89		14.56		
12.98		19.14		25.78		
22.41		26.47		30.50		
18.65		11.23		10.98		
67.50	+	89.73	+	81.82	=	239.05

Black Decimals: Keyboard Dial 2, Upper Dial 2, Middle Dial 4.
Tab Keys 3 and 5. Carriage in Position 3.

A) Enter (13.46) in keyboard. Depress DIVIDEND + KEY.

B) Enter (12.98) in keyboard. Depress ADD BAR.

C) Continue the addition. First total (67.50) appears in the Middle Dial.

D) Enter (1.0) in keyboard. Depress DIVISION KEY.
Set UPPER DIAL CONTROL at X-NE.

Repeat Steps A, B, and C for each column.

Accumulated total (239.05) appears correctly in Upper Dial.

Restore UPPER DIAL CONTROL to normal position (+).

PERCENTAGE

Percentage is the most important subject in business arithmetic other than the four fundamental operations – addition, subtraction, multiplication, and division. The term "percent" is derived from the Latin words per and centum meaning in the hundred or hundredths. Calculations which use hundredths, or percents, as the basis of comparision are referred to as percentages. Every number is 100% of itself. For example, 10 is 100% of 10. It follows that 200% is twice the number and 300% is three times the number. By the same reasoning, 50% of a number is one-half of that number, 25% is one-fourth.

Numbers are read as percents by shifting the decimal point two places to the right.

0.25 is 25.0% 0.125 is 12.5%

FINDING PERCENTAGE: What per cent of $834.00 is $191.82?

Divide 191.82 by 834.00, and the result (23%) appears in the Upper Dial automatically pointed off by the "%" sign. Regardless of how this type of problem is expressed, the amount preceded by the word "of" is always the divisor.

FINDING PERCENT MARK-ON: The percentage of profit on an item (percent mark-on) is usually figured on the selling price.

If the selling price of an item costing $15.00 is $20.00 what is the percentage of mark-on based on selling price?

Negatively divide 15.00 by 20.00. This is done by entering 15.00 in the Middle Dial and dividing by 20.00. Instead of depressing the DIVISION KEY, depress the NEGATIVE DIVISION KEY. The answer (25%) appears in the Upper Dial automatically pointed off by the % sign. The nines to the left of the divide sign show that the answer is in complementary form. See Credit Balance (page 7) for discussion of complements.

FINDING SELLING PRICE: An item costs $9.00 and the mark-on is 20%. What will be the selling price? (Remember that mark-on is a percentage of selling price.) Divide the cost ($9.00) by the complement of the mark-on rate (100% – 20% = 80%).

Divide cost (9.00) by the complement (.80). The selling price (11.25) appears in the Upper Dial with the decimal point correctly located by the Upper Dial Decimal at the "÷" sign.

PERCENT OF INCREASE OR DECREASE

Current figures are frequently compared with those of a previous period or periods. The comparison is expressed as a percentage increase or decrease.

When it is necessary or desirable to obtain the actual difference as well as the percent of difference, the following method is used.

WITH DIFFERENCE:

	Current Period	Previous Period	Amount of Increase	Amount of Decrease	Percent
Case A	5,759	5,212	547		+ 10.5%
Case B	2,421	4,651		2,230	- 47.9%

$$\% \text{ Increase} = \frac{+ \text{Current} - \text{Previous}}{\text{Previous}} \qquad \% \text{ Decrease} = \frac{- \text{Current} + \text{Previous}}{\text{Previous}}$$

Case A: **INCREASE**

Decimals: Keyboard Dial 2, Upper Dial under % sign, Middle Dial 6. Tab Key #5. Carriage in Position 5.

A) Enter Current Period (5,759) in keyboard. Depress DIVIDEND + KEY.

B) Enter Previous Period (5,212) in keyboard. Depress NEG X KEY and Multiplier Key "1". Amount of increase (547) appears in Middle Dial. This amount may be copied to work sheet if desired.

C) Depress DIVISION KEY.
Percent of increase (10.5%) appears in Upper Dial with the decimal point correctly located under the % sign.

Case B: **DECREASE**

Decimals: Same as in Case A.

A) Enter Current Period (2,421) in keyboard. Depress SUBTRACT BAR and DIVIDEND + KEY together.

B) Enter Previous Period (4,651) in keyboard. Multiply by "1". Amount of decrease (2,230) appears in Middle Dial. This amount may be copied to work sheet if desired.

C) Depress DIVISION KEY.
Percent of decrease (47.9%) appears in Upper Dial with the decimal point correctly located under the % sign.

WITHOUT DIFFERENCE – DIRECT METHOD:

	Current Period	Previous Period	Percent
Case A	5,759	5,212	+ 10.5%
Case B	2,421	4,651	- 47.9%

$$\% \text{ Increase} = \frac{\text{Current}}{\text{Previous}} - 100\% \qquad \% \text{ Decrease} = \frac{\text{Current}}{\text{Previous}}$$

Case A: **INCREASE**

Decimals: Keyboard Dial 2, Upper Dial under % sign, Middle Dial 6. Tab Keys 5 and 6. Carriage in Position 5.

A) Enter Current Period (5,759) in keyboard. Depress DIVIDEND + KEY.

B) Enter Previous Period (5,212) in keyboard. Depress DIVISION KEY. Percent of increase (10.5%) appears in Upper Dial with the decimal point correctly located under the % sign. (Note: When using this method, always subtract 100% from the result in the Upper Dial to get the true % figure.)

Case B: **DECREASE**

Decimals: Same as in Case A.

A) Enter Current Period (2,421) in keyboard. Depress DIVIDEND + KEY.

B) Enter Previous Period (4,651) in keyboard. Depress NEGATIVE DIVISION KEY. Percent of decrease (47.9%) appears in Upper Dial with the decimal point correctly located under the % sign. The nines to the left of the divide sign show that the answer is in complementary form.

DIVISION BY USE OF RECIPROCALS

When several items are to be divided by the same divisor, the reciprocal of the divisor may be used as a constant multiplicand. Multiplying this reciprocal by the item gives the same result as direct division. The reciprocal of any number is found by dividing 1.0 by that number.

The reciprocal of 16 is 1.0 divided by 16, or .0625. The reciprocal may not always be an exact decimal equivalent. The reciprocal of 3 is .3333 . . ., a repeating decimal.

The maximum number of significant figures in the reciprocal may be obtained by shifting the carriage all the way to the right (Position 10). The 1.0 is entered in the left-most Keyboard Dial and added into the Middle Dial. The divisor is entered in the keyboard starting with the high order digit in column 9. The DIVISION KEY is then depressed.

$1 \div 3 = 03333333333$ $1 \div 16 = 06250000000$

The decimal point is located in the reciprocal by prefixing to the significant figures of the reciprocal one less cipher than there are whole numbers in the divisor. In the first example, the divisor is just the whole digit; therefore, the decimal point is placed just before the first significant figure in the quotient. The first significant figure in the reciprocal of 16 is 6. There are two whole numbers in 16; so prefix one cipher. The reciprocal is .0625.

$484 \div 16 = 30.25$ $484 \times .0625 = 30.25$

It can be seen that multiplying 484 by .0625 gives exactly the same answer as dividing 484 by 16

PRORATING

It is often necessary to find the percentage of parts to the whole. Several methods may be used depending on the size of the amounts involved and the degree of accuracy required.

DIRECT DIVISION METHOD - with LOCKED DIVISOR

FORMULA:

$$\frac{\text{Each Amount}}{\text{Total}} = \%\text{ of Total}$$

$$\frac{3{,}767}{21{,}913} = 17.19\%$$

Dept.	Expense	Percent of Total
A	$3,767	17.19%
B	5,014	22.88
C	964	4.40
D	4,887	22.30
E	7,281	33.23
	$21,913	100.00%

DIVISION CLEAR RETURN KEY away from operator. Carriage in Position 1.

A) First add Department Expenses to get Total Expense.

B) Lock Total Expense (21913) in right side of keyboard by holding down the KEYBOARD CLEAR KEY while entering the figures. Set Keyboard Dial decimal immediately to the left of this amount (.21913).

C) To let the Answer Decimal Point "find itself", enter Total Expense again immediately to the left of the amount already set (Keyboard Dial reads 21913.21913). Depress Tab Key #5 to shorten division line-up. Depress DIVIDEND + KEY, SUBTRACT BAR, and DIVISION KEY. 100000 appears in Upper Dial. Point off this amount as a per cent (100.00%) by setting the black decimal at 3 places.

D) Enter the first dividend (3767) in keyboard immediately to the left of the decimal point. (Keyboard Dial reads 3767.21913). Depress ADD BAR, SUBTRACT BAR, and DIVISION KEY. The answer (17.19%) appears in Upper Dial. Copy this amount to work sheet.

E) Let Remainders accumulate and proceed as above for each of the remaining expenses. Upon completion, Middle Dial shows all zeros as proof that each amount was correctly entered. Percentages should add to 100.00%, proving the copied answers are correct.

Restore DIVISION CLEAR RETURN KEY toward operator.

NOTE: This method is limited to amounts containing not more than five digits.

RECIPROCAL - PERCENTAGE METHOD

When several items are to be divided by the same divisor, the reciprocal of the divisor may be used as a constant multiplicand. Multiplying this reciprocal by the item gives the same result as direct division. (The reciprocal of any number is found by dividing the unit "1" by that number.)

FORMULA:

$$\frac{1}{\text{Total}} \times \text{Each Amount} = \% \text{ of Total}$$

$$\frac{1}{21{,}913} \times 3{,}767 = 17.19\%$$

Dept.	Expense	Per cent of Total
A	$3,767	17.19%
B	5,014	22.88
C	964	4.40
D	4,887	22.30
E	7,281	33.23
	$21,913	100.00%

Carriage at extreme right. No tabs set.

A) Enter ("1") at extreme left of keyboard. Depress DIVIDEND + KEY.

B) Enter Total Expense (21913) at extreme left of keyboard. Depress DIVISION KEY.

C) Copy reciprocal (.45635) in right side of keyboard and clear Upper Dial.

D) Multiply by Total Expense (21913), and set Magic Window Decimal Marker between the second and third nines in the Middle Dial to Read 99.999%.

E) Depress "Clear-Tab" group. Multiply by Department A's Expense (3767). The answer (17.19%) appears in Middle Dial at Orange Decimal. Copy this amount to work sheet.

F) Proceed, as in Step (E), for each department.

For proof that each percentage expense was correctly copied to worksheet, clear keyboard and add percentages. These should total 100.00%. If the total does not exactly equal 100.00%, the usual practice is to adjust the largest amount.

RECIPROCAL - PERCENTAGE METHOD - with SPLIT CARRIAGE

Percentages in this method can be found by the use of the split carriage. The blue line on the Middle Dial splits the carriage into two parts. In this method, remainders are accumulated in the right side of the Middle Dial, while the different percentages appear to the left of the split. Proof of correct entry of all figures and the total of 100% is indicated when the right side of the Middle Dial clears to zero at the end of the computations.

Consult your Marchant representative for further information on this method.

PER UNIT OF BASE - CONSTANT METHOD

An amount may be prorated or spread-over several items or departments without calculating percentage relationships. In the following example, it is desired to prorate the total miscellaneous expense of $5,623.45 by department on the basis of departmental sales.

FORMULA:

$$\frac{\text{Total Expense}}{\text{Total Sales}} = \text{Expense per dollar of sales (Multiply this constant factor by department sales figure.)}$$

$$\frac{5{,}623.45}{21{,}998.} = .2556346 \times 5{,}423 = 1{,}386.31$$

Dept.	Sales	Prorated Expense
A	$5,423	$1,386.31
B	1,503	384.22
C	9,565	2,445.14
D	4,632	1,184.10
E	875	223.68
	$21,998	$5,623.45

Carriage at extreme right. No tabs set.

A) Enter amount to be prorated (Total Department Expense, 562345) at extreme left of keyboard. Depress DIVIDEND + KEY.

B) Enter Base Total (Total Sales, 21998) at extreme left of keyboard. Depress DIVISION KEY.

C) Copy Expense per Sales Dollar (.2556346) in right side of keyboard and clear Upper Dial.

D) Multiply by Total Sales (21998) for positive proof of correct Keyboard Dial entry and to determine decimal setting.

E) Set Magic Window Decimal Marker at 2, which corresponds to the correct decimal point of 5623.45.

F) Depress "Clear-Tab" group. Multiply by Department A's Sales (5423). The answer (1,386.31) appears in Middle Dial at Orange Decimal. Copy this prorated expense to work sheet.

G) Proceed, as in Step (F), for each department.

For proof that each prorated expense was correctly copied to worksheet, clear keyboard and add expenses. These should total 5,623.45. If the total does not exactly equal 5,623.45, the usual practice is to adjust the largest amount.

PER UNIT OF BASE - CONSTANT METHOD - with SPLIT CARRIAGE

The split carriage is used in the Per Unit of Base - Constant Method in the same way as in the Reciprocal - Percentage Method.

Consult your Marchant representative for further information on this method.

MULTIPLICATION OF THREE OR MORE FACTORS

Marchant's Three-Dial-Proof is especially useful when multiplying three or more factors.

$A \times B \times C$ For Example: $76 \times 43 \times 52 = 169{,}936$

A) Multiply (76) by (43). Clear Keyboard Dial and copy the Middle Dial amount (3,268) into the keyboard. Clear carriage dials.

B) Multiply by (52). Answer 169,936) appears in Middle Dial.

$\frac{A \times B \times C}{D}$ After multiplying $A \times B \times C$, simply enter D (divisor) in keyboard and divide.

Refer to the "Marchant-Methods" series for detailed explanation of other examples of this type of problem, such as:

$\frac{A \times B \times C}{D \times E}$ $\frac{A \times B \times C \times D}{E \times F}$ $\frac{A \times B \times C \times D \times E}{F \times G}$

INTEREST

The amount on which interest is paid is called the principal. The rate of interest is expressed as a percentage. Interest is paid for the use of a sum of money for a certain time period. One year is nearly always the unit of time. If we say the rate of interest is 6%, we mean that 6% of the principal is paid each year as interest. The universal interest formula is expressed as follows:

$$\frac{\text{PRINCIPAL} \times \text{RATE} \times \text{DAYS}}{360 \text{ (or } 365)}$$

Compute the interest on $3,549. at 6% for 50 days (360 day basis).

Black Decimals: Keyboard Dial 2, Upper Dial 3, Middle Dial 5. Tab keys 3 and 5.

A) With carriage in position 3, enter principal (3549.) in keyboard.

B) Multiply by interest rate (.06).

C) Clear keyboard and copy result (212.94) from Middle Dial into keyboard. Depress "Clear-Tab" group.

D) Move carriage to the fifth position and multiply by the number of days (50.).

E) Clear keyboard and enter (360.) in keyboard. Depress DIVISION KEY. The interest ($29.575) appears in the Upper Dial.

The computation of interest can be greatly simplified by using Marchant Table Number 5, Short Cut Table of Interest, Annual Rates from 1/8% to 12%, 360 or 365 day basis. This would reduce the procedure outlined above to

$$\frac{\text{PRINCIPAL} \times \text{DAYS}}{\text{TABLE FACTOR}}$$

Your Marchant representative will gladly furnish this Table on request.

This kind of problem illustrates the versatility of the Figuremaster in alternating multiplication and division problems without "conditioning" the calculator for each type of problem and without the necessity of clearing intermediate figures. The division is done directly following the multiplication, and with the tabulation setting, the quotient is automatically pointed off correctly.

SQUARE ROOT

An operator can easily extract the square root of a number accurate to five significant digits using the method outlined below and the square root divisors given in Marchant Table 82A, on the next page.

If N (the number whose root is desired) is greater than 100 or less than 1, move the decimal point by steps of two digits to the left or to the right any even number of places required to arrive at a number between 1 and 100. In Column A of the table, note between which numbers N then lies, and use the values in Column B and C listed in the line between those numbers.

Example $\sqrt{5331.172}$

Find Square Root of 5331.172 (N). Move decimal point to the left so N reads 53.31172. This figure lies between the Column A values 53.2 and 54.0, and therefore we use Column B value 536 and Column C value 146425.

All controls in normal position. Carriage at extreme right.

A) Enter N (53.31172) at extreme left of keyboard. Depress DIVIDEND + KEY.

B) Enter Column B number (536) at extreme left of keyboard. Depress ADD BAR.

C) Enter Column C number (146425) at extreme left of keyboard. Depress DIVISION KEY.

The square root of N (73.01466279) appears in Upper Dial.

If N is greater than 1, point off the root to give one digit to the left of the decimal in the root for each pair of digits to the left of the decimal in N, counting any odd digit at the left of N as a pair. (For instance, if N has five digits before the decimal, this is two pairs and one odd digit and is to be counted as three pairs, thus giving three digits before the decimal in the root.)

If N is less than 1, point off the root so that the first significant digit in the root is preceded by one zero to the right of the decimal for each pair of zeros immediately following the decimal in N, not counting odd zeros. (For instance, if there are five zeros immediately following the decimal in N, this is two pairs and an odd zero and is to be counted as two pairs, thus giving two zeros following the decimal in the root.)

TABLE FOR OBTAINING SQUARE ROOTS TO FIVE SIGNIFICANT DIGITS

A	B	C
1.00		
	102	202 00
1.04		
	106	205 92
1.08		
	11	209 77
1.12		
	114	213 55
1.16		
	118	217 26
1.20		
	122	220 91
1.24		
	126	224 507
1.29		
	132	229 79
1.35		
	138	234 954
1.41		
	144	240 01
1.47		
	15	244 956
1.53		
	156	249 806
1.59		
	162	254 56
1.65		
	168	259 235
1.71		
	174	263 82
1.77		
	18	268 33
1.83		
	186	272 77
1.90		
	194	278 575
1.98		
	202	284 26
2.06		
	21	289 834
2.14		
	218	295 3
2.22		
	226	300 67
2.30		
	234	305 95
2.38		
	242	311 13
2.46		
	25	316 236
2.55		
	26	322 5
2.65		
	27	328 64
2.75		
	28	334 67
2.85		
	29	340 594
2.95		
	3	346 42
3.05		
	31	352 14
3.15		
	32	357 78
3.25		
	33	363 326
3.36		
	342	369 87
3.48		
	354	376 305
3.60		
	366	382 63
3.72		
	378	388 85
3.84		
	39	394 974
3.96		
	402	401 006
4.09		
	416	407 93
4.23		
	43	414 736
4.37		
	444	421 43
4.51		
	458	428 025
4.65		
	472	434 52
4.80		

A	B	C
4.80		
	488	441 82
4.96		
	504	449 006
5.12		
	52	456 08
5.28		
	536	463 04
5.44		
	552	469 9
5.61		
	57	477 5
5.79		
	588	484 98
5.97		
	606	492 35
6.15		
	624	499 606
6.33		
	642	506 76
6.51		
	66	513 817
6.7		
	68	521 543
6.9		
	7	529 16
7.1		
	72	536 66
7.3		
	74	544 065
7.5		
	76	551 37
7.7		
	78	558 575
7.9		
	8	565 69
8.1		
	82	572 72
8.3		
	84	579 66
8.5		
	86	586 52
8.7		
	88	593 3
8.9		
	9	600 00
9.1		
	92	606 63
9.3		
	94	613 19
9.5		
	96	619 68
9.7		
	98	626 1
9.9*		
	1	632 46
10.1		
	102	638 75
10.3		
	104	644 98
10.5		
	106	651 16
10.7		
	108	657 27
10.9		
	11	663 33
11.1		
	112	669 33
11.3		
	114	675 28
11.5		
	116	681 18
11.7		
	118	687 03
11.9		
	12	692 82
12.1		
	122	698 57
12.3		
	124	704 28
12.5		
	126	709 93
12.7		
	128	715 54
12.9		
	13	721 11
13.1		
	132	726 64
13.3		

A	B	C
13.3		
	134	732 12
13.5		
	136	737 57
13.7		
	138	742 97
13.9		
	14	748 33
14.1		
	142	753 66
14.3		
	144	758 95
14.5		
	146	764 2
14.7		
	148	769 42
14.9		
	15	774 6
15.1		
	152	779 75
15.3		
	154	784 86
15.5		
	156	789 94
15.7		
	158	794 99
15.9		
	16	800 01
16.2		
	164	809 946
16.6		
	168	819 763
17.0		
	172	829 465
17.4		
	176	839 054
17.8		
	18	848 535
18.2		
	184	857 91
18.6		
	188	867 186
19.0		
	192	876 36
19.4		
	196	885 44
19.8		
	2	894 43
20.2		
	204	903 33
20.6		
	208	912 15
21.0		
	212	920 87
21.4		
	216	929 52
21.8		
	22	938 09
22.2		
	224	946 58
22.6		
	228	954 99
23.0		
	232	963 33
23.4		
	236	971 6
23.8		
	24	979 8
24.2		
	244	987 93
24.6		
	248	996
25.0		
	252	100 4
25.4		
	256	101 193
25.8		
	26	101 981
26.2		
	264	102 762
26.6		
	268	103 538
27.0		
	272	104 308
27.4		
	276	105 072
27.8		
	28	105 831
28.3		

A	B	C
28.3		
	286	106 9587
28.9		
	292	108 075
29.5		
	298	109 1795
30.1		
	304	110 273
30.7		
	31	111 356
31.3		
	316	112 4284
31.9		
	322	113 491
32.5		
	328	114 543
33.1		
	334	115 586
33.7		
	34	116 62
34.3		
	346	117 644
34.9		
	352	118 66
35.5		
	358	119 667
36.1		
	364	120 665
36.7		
	37	121 656
37.3		
	376	122 638
37.9		
	382	123 613
38.5		
	388	124 58
39.1		
	394	125 539
39.7		
	4	126 492
40.4		
	408	127 7505
41.2		
	416	128 997
42.0		
	424	130 2313
42.8		
	432	131 454
43.6		
	44	132 666
44.4		
	448	133 866
45.2		
	456	135 056
46.0		
	464	136 236
46.8		
	472	137 405
47.6		
	48	138 565
48.4		
	488	139 7146
49.2		
	496	140 855
50.0		
	504	141 9865
50.8		
	512	143 109
51.6		
	52	144 223
52.4		
	528	145 328
53.2		
	536	146 425
54.0		
	544	147 513
54.8		
	552	148 594
55.6		
	56	149 667
56.5		
	57	150 9974
57.5		
	58	152 316
58.5		
	59	153 6236
59.5		
	6	154 92
60.5		

A	B	C
60.5		
	61	156 2056
61.5		
	62	157 481
62.5		
	63	158 746
63.5		
	64	160 001
64.5		
	65	161 246
65.5		
	66	162 481
66.5		
	67	163 708
67.5		
	68	164 925
68.5		
	69	166 133
69.5		
	7	167 333
70.5		
	71	168 5235
71.5		
	72	169 706
72.5		
	73	170 881
73.5		
	74	172 047
74.5		
	75	173 206
75.5		
	76	174 356
76.5		
	77	175 5
77.5		
	78	176 636
78.5		
	79	177 764
79.5		
	8	178 886
80.5		
	81	180 000
81.5		
	82	181 108
82.5		
	83	182 209
83.5		
	84	183 303
84.5		
	85	184 391
85.5		
	86	185 473
86.5		
	87	186 548
87.5		
	88	187 617
88.5		
	89	188 68
89.5		
	9	189 737
90.5		
	91	190 788
91.5		
	92	191 834
92.5		
	93	192 873
93.5		
	94	193 908
94.5		
	95	194 936
95.5		
	96	195 96
96.5		
	97	196 977
97.5		
	98	197 9905
98.7		
	994	199 4
100.0	(not inclusive)	

TABLE 82A

*FOR SQUARE ROOTS OF NUMBERS FROM 9.9 TO, BUT NOT INCLUDING, 10 ENTER N IN STEP 1 BEGINNING IN NEXT TO LEFTMOST KEYBOARD DIAL INSTEAD OF IN LEFTMOST DIAL.

Decimal Equivalents of Common Fractions

3rds	4ths	6ths	8ths	12ths	16ths	32nds	Dec. Eq.
						1/32	.031 25
					1/16	2/32	.062 5
				1/12			.083 33
						3/32	.093 75
			1/8		2/16	4/32	.125
						5/32	.156 25
		1/6		2/12			.166 67
					3/16	6/32	.187 5
						7/32	.218 75
	1/4		2/8	3/12	4/16	8/32	.25
						9/32	.281 25
					5/16	10/32	.312 5
1/3		2/6		4/12			.333 33
						11/32	.343 75
			3/8		6/16	12/32	.375
						13/32	.406 25
				5/12			.416 67
					7/16	14/32	.437 5
						15/32	.468 75
	2/4	3/6	4/8	6/12	8/16	16/32	.5
						17/32	.531 25
					9/16	18/32	.562 5
				7/12			.583 33
						19/32	.593 75
			5/8		10/16	20/32	.625
						21/32	.656 25
2/3		4/6		8/12			.666 67
					11/16	22/32	.687 5
						23/32	.718 75
	3/4		6/8	9/12	12/16	24/32	.75
						25/32	.781 25
					13/16	26/32	.812 5
		5/6		10/12			.833 33
						27/32	.843 75
			7/8		14/16	28/32	.875
						29/32	.906 25
				11/12			.916 67
					15/16	30/32	.937 5
						31/32	.968 75

64ths	
1	.015625
2	.031250
3	.046875
4	.062500
5	.078125
6	.092750
7	.109375
8	.125000
9	.140625
10	.156250
11	.171875
12	.187500
13	.203125
14	.218750
15	.234375
16	.250000
17	.265625
18	.281250
19	.296875
20	.312500
21	.328125
22	.343750
23	.359375
24	.375000
25	.390625
26	.406250
27	.421875
28	.437500
29	.453125
30	.468750
31	.484375
32	.500000
33	.515625
34	.531250
35	.546875
36	.562500
37	.578125
38	.593750
39	.609375
40	.625000
41	.640625
42	.656250
43	.671875
44	.687500
45	.703125
46	.718750
47	.734375
48	.750000
49	.765625
50	.781250
51	.796875
52	.812500
53	.828125
54	.843750
55	.859375
56	.875000
57	.890625
58	.906250
59	.921875
60	.937500
61	.953125
62	.968750
63	.984375

TABLE NO. 33

THIS NAME. . .

MARCHANT

With the purchase of a Marchant calculator you share in the Marchant tradition of fifty years standing – the tradition of giving the ultimate in product value and figurework service.

THE FINEST AVAILABLE research, engineering, materials, production techniques, and human abilities are the basic ingredients of your Marchant calculator.

OUR SALES REPRESENTATIVES' statements are responsible presentations based on established acts and are backed by this Company.

OUR INSTRUCTORS are anxious to make certain that your operators clearly understand each Marchant feature and operation, in order to assure you of the full savings made possible by your purchase of a Marchant.

OUR TECHNICAL SERVICES include the preparation of special, detailed applications of your Marchant to your figurework. These applications, called "Marchant Methods," are made available to you free of charge.

OUR MECHANICAL SERVICE Representatives have a sincere interest in the important role your Marchant plays in contributing to efficient and profitable operation of your business. They are thoroughly trained and fully qualified to assure you of long and faithful service from your Marchant calculator.

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